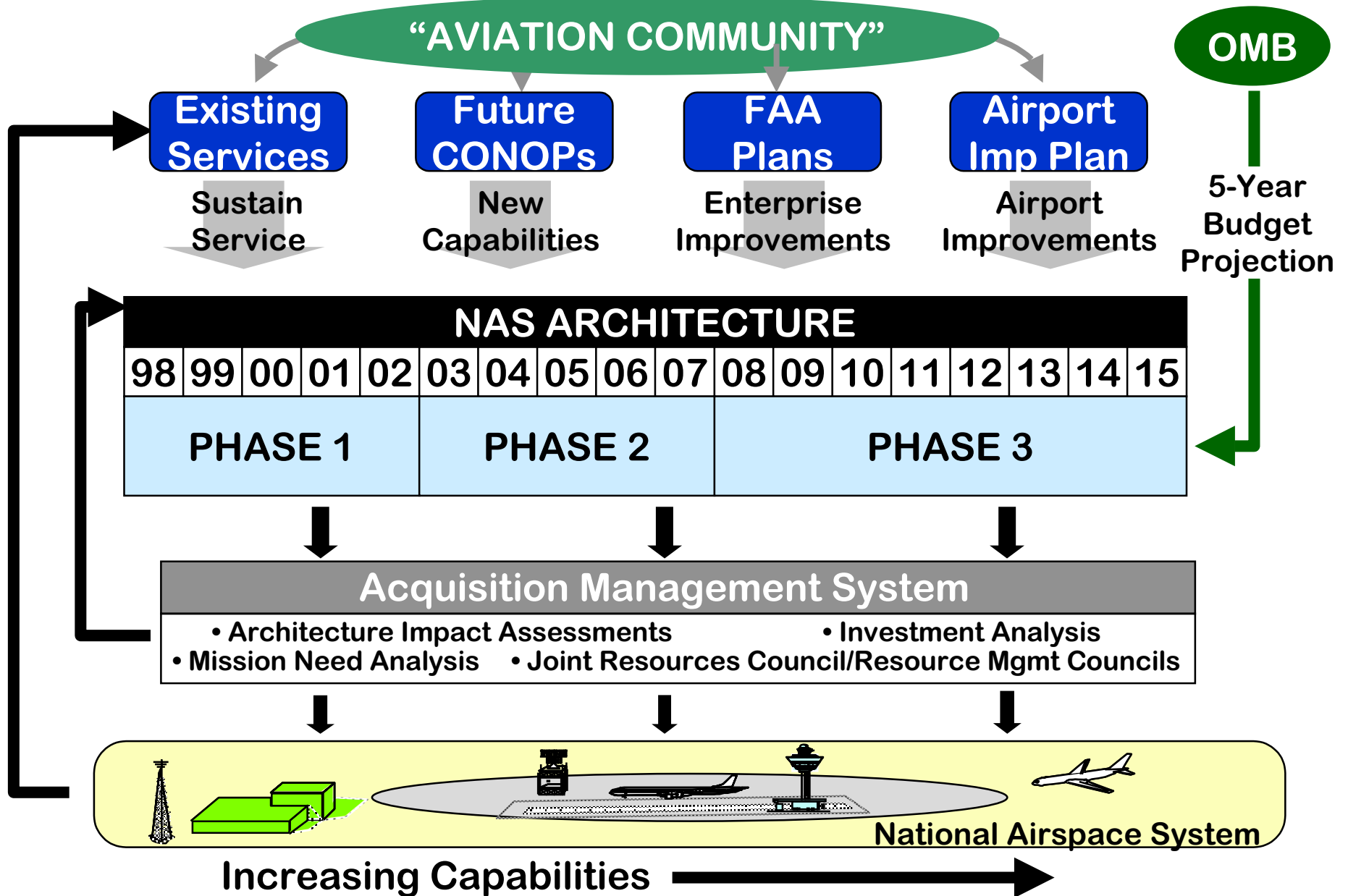

NAS Capabilities

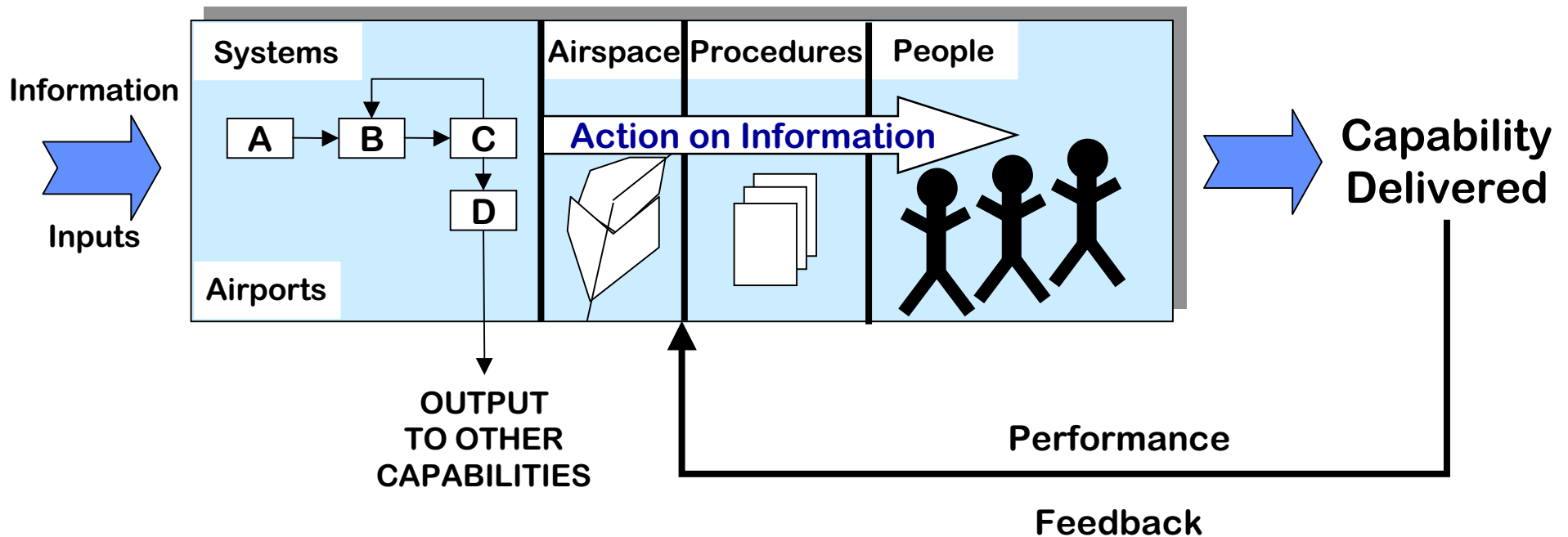
**Transportation Research Board Panel
Modernizing the National Airspace System**

Dr. John Scardina

NAS Modernization Process

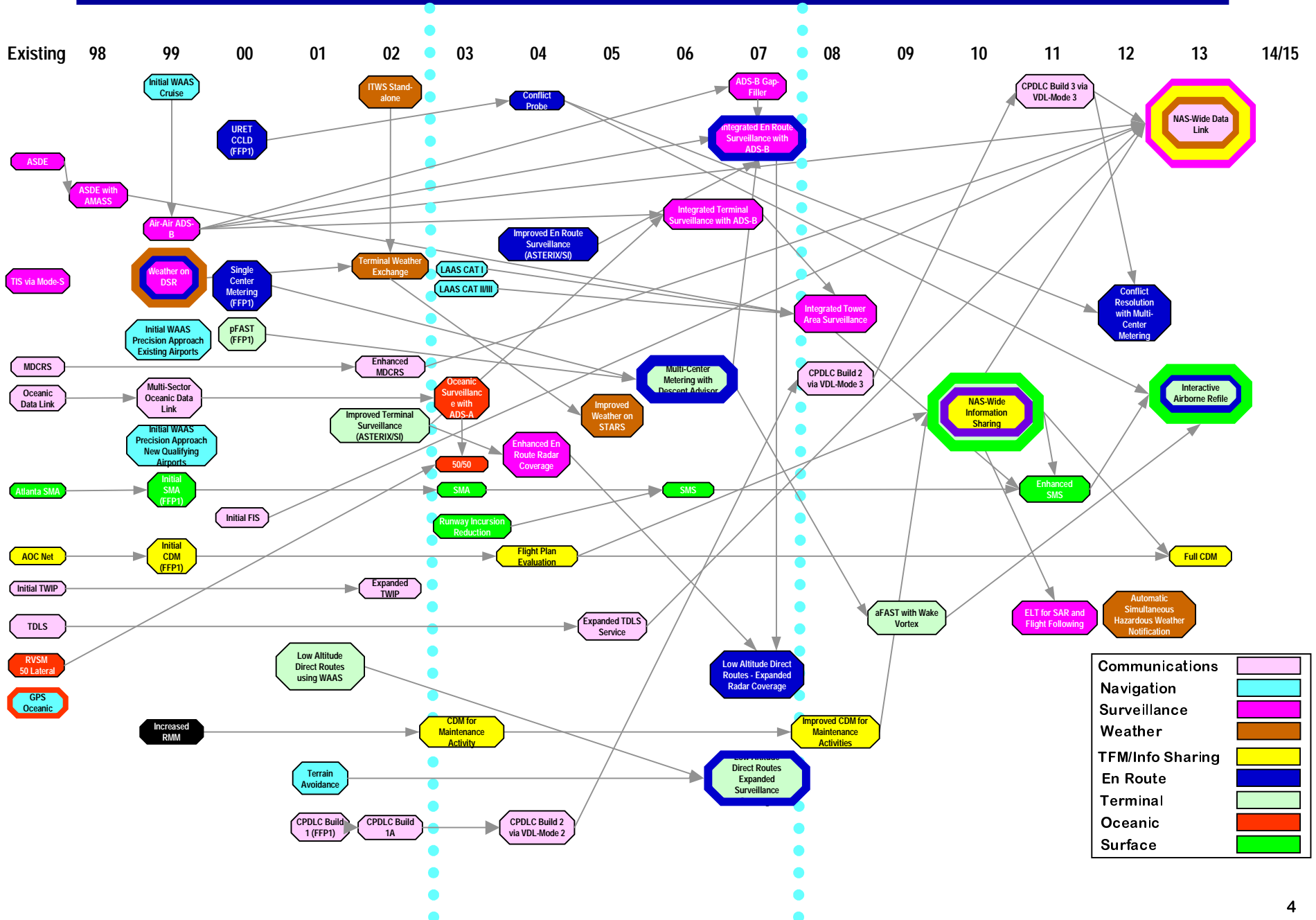


The NAS Capabilities Model

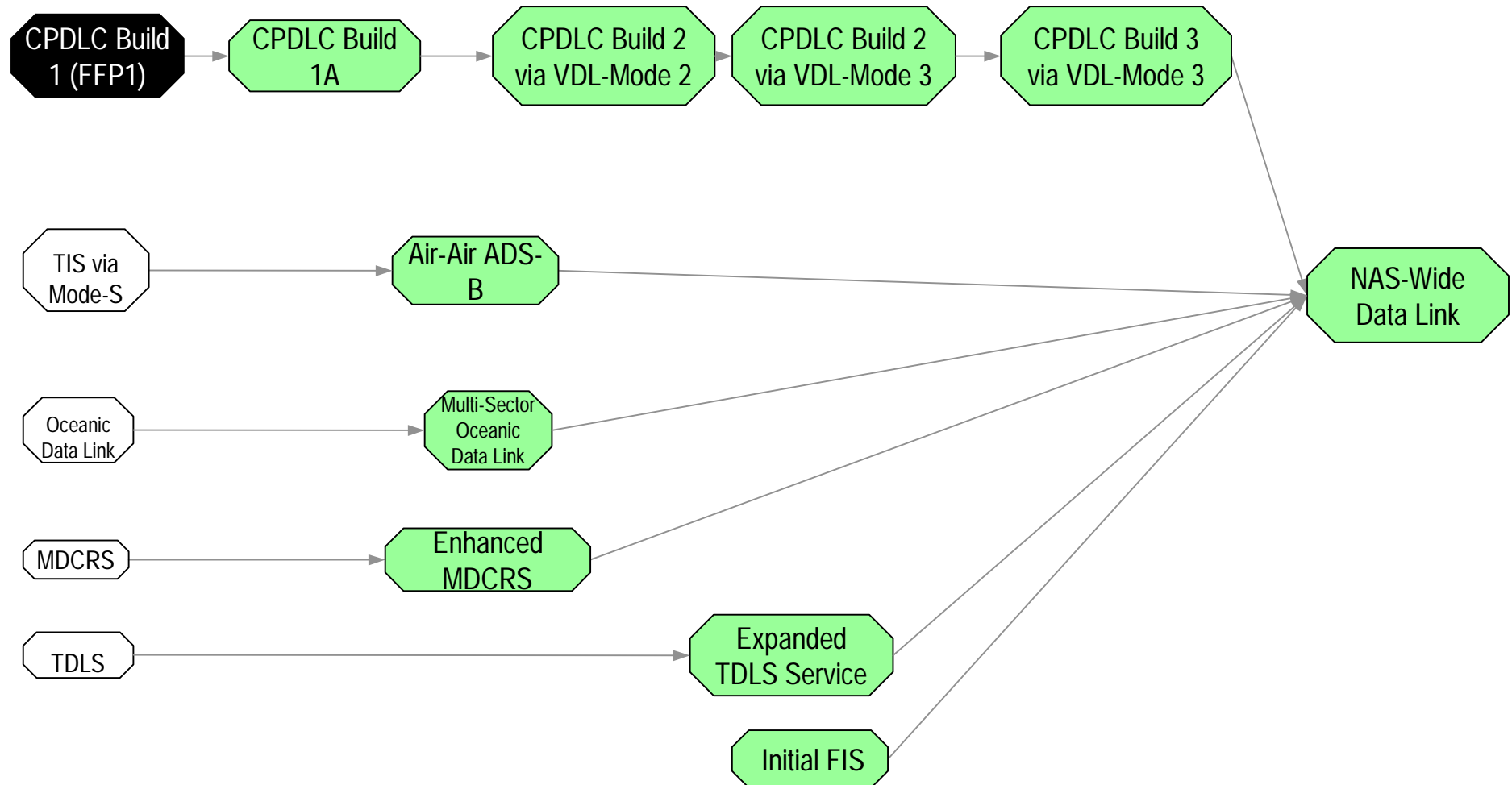


Delivery of capabilities are through collection, analyses, and processing of information by Systems . The information output of these Systems is then acted upon by People within the constraints of the Airspace following established Procedures. The result is that the People deliver a capability. Performance metrics are then used as feedback within the capabilities model to improve services.

NAS Modernization Capabilities



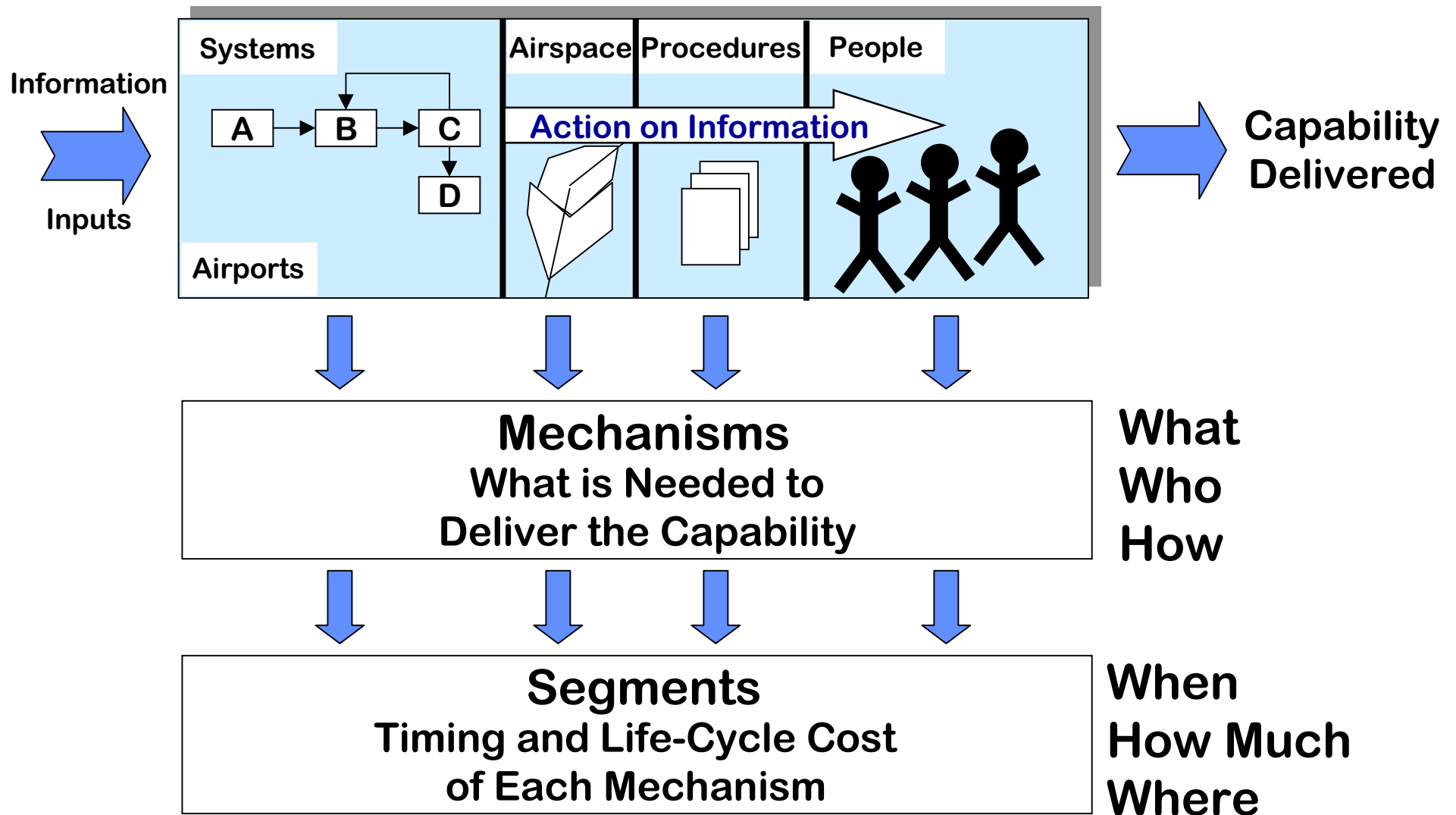
Data Link Capability Interdependencies



Capabilities must be segmented into phases or builds so that

- Transitions are understood
- The builds are affordable
- The benefits can be traced

Capabilities Model Segmentation



Capabilities Mechanisms

Segmentation of Capabilities into Mechanisms

- Allows for understanding and consensus building around the steps
- Helps translate the Concept of Operations into requirements
- Mechanisms can then have costs and schedules developed
- Provides a repeatable process for NAS planning and engineering

Start with CONOPS

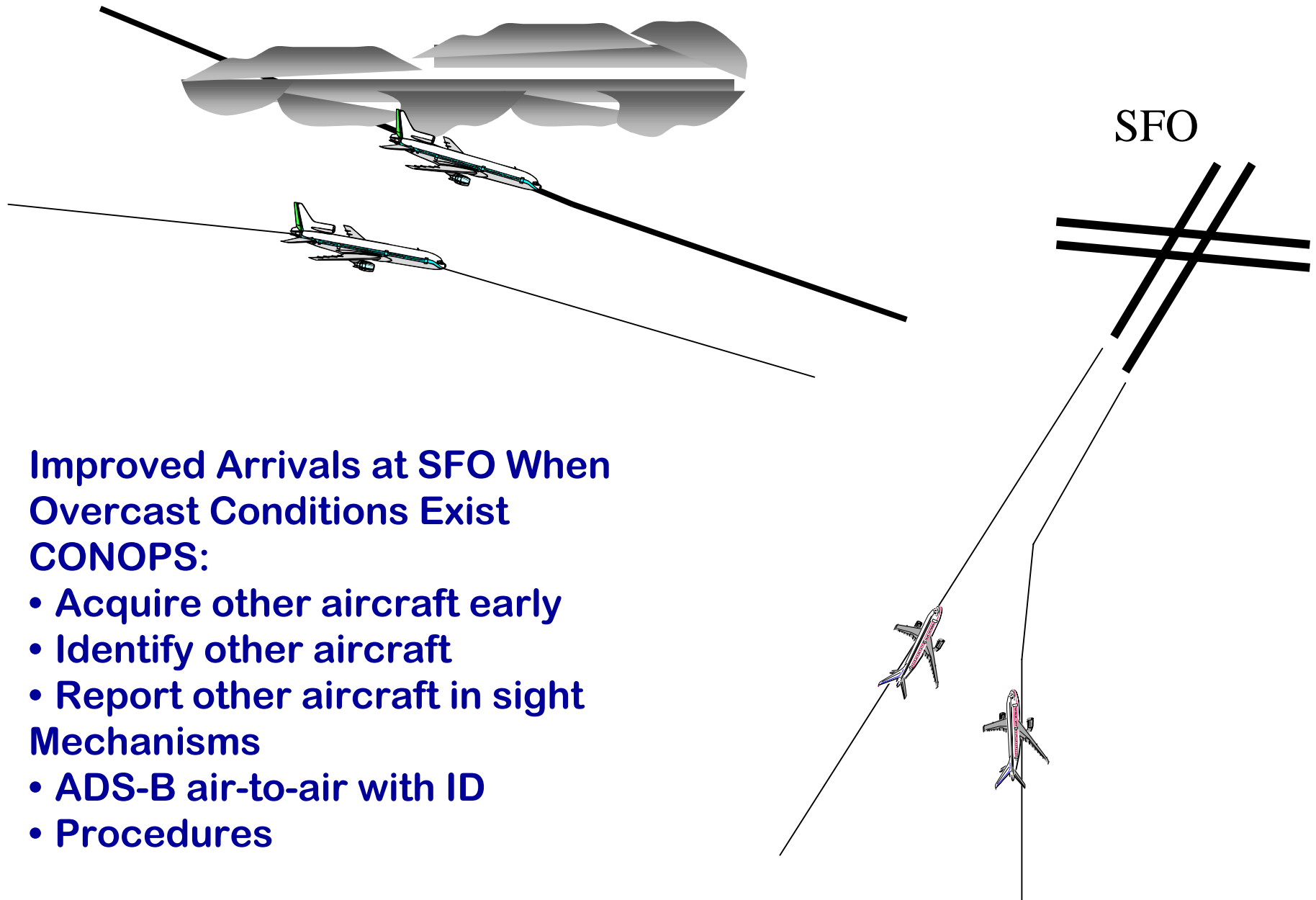
High Level Operational Requirements
for a Capability

Define Mechanisms

Define Information Flows

Derive Cost and Schedule

Low Visibility Arrivals at SFO



**Improved Arrivals at SFO When
Overcast Conditions Exist**

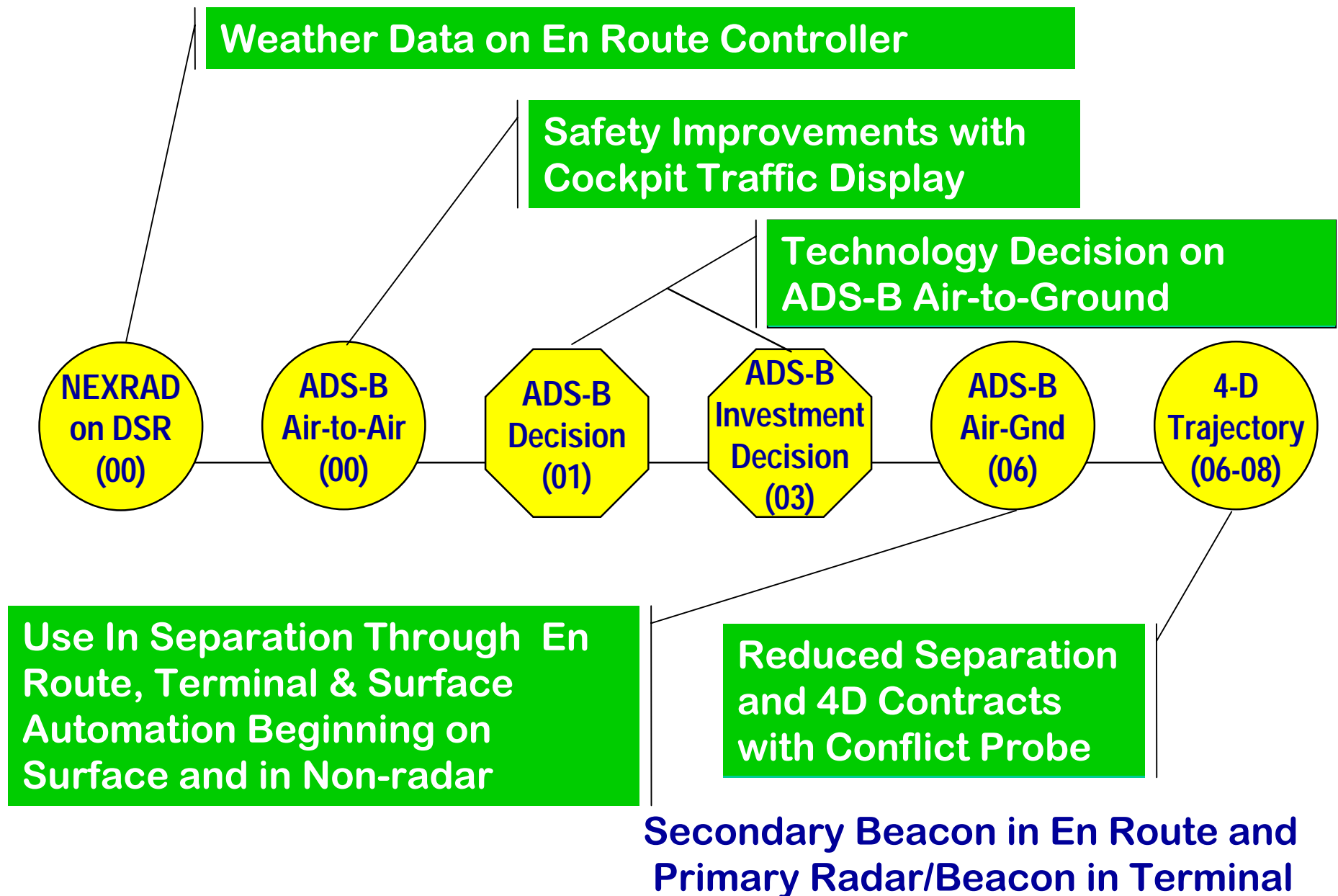
CONOPS:

- Acquire other aircraft early
- Identify other aircraft
- Report other aircraft in sight

Mechanisms







- ADS-B air-to-air with ID
- Procedures

SURVEILLANCE - Capabilities



Conclusions

NAS Capabilities

-  Described in the Blueprint for NAS
-  Modernization
-  Described in the Architecture
-  Traceable to the Free Flight CONOPS
-  Mechanisms defined for end-state
-  Work continuing on the stepping stones to realizing full Free Flight